

Serial No.: 10/502,060
Atty. Docket No.: P69752US0

REMARKS

This Amendment is being filed concurrently with an RCE.

The Office Action mailed May 3, 2006, has been carefully reviewed and, by this Amendment, claims 26, 27 and 29 have been canceled, claims 14 and 23-28 have been amended and new claims 31 and 32 have been added. Claims 14-25, 28 and 30-32 are pending in the application. Claims 14, 25 and 28 are independent. In view of the amendments and the following remarks, favorable reconsideration of this application is respectfully requested.

The Examiner rejected claims 14, 16-18 and 22-27 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,932,103 to Rice in view of EP 0 626 247 to Smith. Also under 35 U.S.C. 103(a), the Examiner rejected claims 15 and 21 as being unpatentable over Rice in view of Smith and further in view of U.S. Patent No. 3,539,666 to Schirmer, rejected claims 14, 19, 20, 22-24, 28 and 29 as being unpatentable over Smith in view of U.S. Patent No. 5,069,612 to Teutsch et al. ("Teutsch") and/or U.S. Patent No. 3,471,899 to Ronden, and further rejected claims 15, 21 and 30 as being unpatentable over Smith in view of Teutsch and/or Ronden and further in view of Schirmer.

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As set forth in amended claim 14, the present invention is directed to a tubular film die head for extruding single-layer or multi-layer film. The tubular film die head includes an annular die gap and at least two fastening elements having coolant-carrying capability. The fastening elements, which pass through and are *loosely constrained* between opposite ends thereof in holes in the die head, fix at least two components, which together border areas bearing plastic melt within the tubular film die head, against one another. At least one of the fastening elements has a coolant intake line formed therein and at least one of the fastening elements has a coolant discharge line formed therein. Coolant running through the coolant lines results in the die head having a higher temperature during operation than the temperature of the fastening elements. Because of this temperature difference, *the die plate expands more than the fastening elements so that the force exerted by the fastening elements in fixing the components together is increased.* This is not shown or suggested by the prior art and is supported in the specification on page 3, lines 17-22; the last four lines on page 4; and the penultimate paragraph on page 5.

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Rice teaches a tubular film die head with a single fastening element structured as a coolant carrying element. The inserted end of the fastening element is fully enclosed within the central portion 47 of the die body 22, i.e., it does not protrude such that it cannot be loosely constrained between its opposite ends, as claimed by the present invention. Hence, heating of the die body to a higher temperature than that of the coolant-bearing fastening element would not *increase the force exerted by the fastening element in fixing any components together*, as provided in claim 14.

Smith discloses the use of inlet and outlet passages for a blown film die. Smith is silent with respect to a coolant-carrying fastening element that is loosely constrained between its ends so that, when coolant flows through the fastening element, a temperature difference is created between the die head and the fastener that increases the fixation force of the fastening element.

Teutsch and Ronden also lack the necessary teaching to reach the claimed invention when combined with Rice and/or Smith. Both Teutsch and Ronden are limited to the use of screws only as conventional fastening elements. There is nothing to suggest the inclusion of coolant carrying lines in these screws, nor the

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other features already discussed as missing in connection with Rice and Smith.

More particularly, Ronden, like Rice, discloses only fastening elements that are fully enclosed at their inserted ends. As a result, they cannot have an increased fixation effect as between their opposite ends as their inserted ends are not secured. Teutsch shows a fastening element 104 secured at both ends but there is no motivation to modify this fastening element to include a coolant-carrying line. To the contrary, heater coils 164, 166, 168, etc., are provided in the vicinity of the fastening element 104 to maintain adequate temperature (see column 7, lines 32-44). In addition, tightening of the constraint that is imposed by the fastening element 104 would be counterproductive as the spacing 88 and resulting air spaces 90 need to be maintained in order to thermally isolate the modules 14, 16, 18 (see column 4, lines 24-30). As for bore 152 in the centrally positioned mandrel 34, this bore is provided to allow air to escape and has no cooling function (column 7, lines 13-16). Nor would the mandrel act to tighten the modules against one another.

For at least the foregoing reasons, claim 14 is patentable over the cited art. Claims 25 and 28 are also

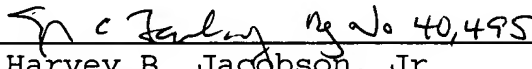
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patentable for at least the same reasons as claim 14. Claims 15-24 and 30-32 are in condition for allowance as claims properly dependent on an allowable base claim and for the subject matter contained therein.

With the foregoing amendments and remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any questions or comments, the Examiner is cordially invited to telephone the undersigned attorney so that the present application can receive an early Notice of Allowance.

Respectfully submitted,

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